

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

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TOWN OF FRAMINGHAM REQUEST FOR	)	
DETERMINATION OF RATES APPLICABLE TO	)	D.T.E. 02-46
TRANSPORTATION AND TREATMENT OF SEWAGE	)	
PURSUANT TO INTERMUNICIPAL AGREEMENT	)	

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TOWN OF FRAMINGHAM'S RESPONSE TO  
THE TOWN OF ASHLAND'S SECOND SET OF INFORMATION REQUESTS

The Town of Framingham ("Framingham") responds to the Town of Ashland's Second Set of Information Requests as follows.

**D.T.E. 02-46: ASH 2-1**

What repairs have been made to the shared sewers since 1963? What was the nature of these repairs? What did the repairs cost?

**RESPONSE TO ASH 2-1**

Framingham is continuing its search for information responsive to this question. As set forth in previous responses, Framingham assesses operations and maintenance costs to its users on a system-wide basis based on quantity of flow. Thus, Framingham has never attempted to segregate data relating to operations and maintenance costs on a "pipe by pipe" basis.

Framingham is aware that since 1963, all parts of the "shared system" have been replaced, except for a small portion of pipe across a bridge near the intersection of Eames and Herbert Street. The table below identifies the year in which each segment of "shared pipe" was most recently replaced. Some of the original pipe remains in use as "parallel" or "overflow" pipe.

**Bates Road Connection**

*Original Pipe*

Location	Pipe Size	Material	Pipe Length	Year Constructed
Bates Rd - Andrews St.	12	C.I.	2348.7	1953
Andrews St. - Eames St.	12	C.I.	2050.95	1953
Eames St. - Irving St.	14	C.I.	1358.2	1941
Irving St. - Beaver St.	18	C.I.	2000	1913
Beaver St. - Second St.	18	C.I.	3577.2	1913

#### *Replacement Pipe*

Location	Pipe Size	Material	Pipe Length	Year Constructed
Bates Rd. - Andrews St.	18	PVC	2422	1988
Andrews St. - Eames St.	18	PVC	2213.5	1988
Eames St. - Irving St.	24	RCP	1358.3	1983
Irving St. - Beaver St.	30	RCP	1814	1974
See Below				

#### **CSX Connection**

#### *Original Pipe*

Location	Pipe Size	Material	Pipe Length	Year Constructed
CSX - Waverley St.	24	RCP	3390	1959
Waverley St. - Second St.	24 x 36	Brick	3075.4	1913

#### *Replacement Pipe*

Location	Pipe Size	Material	Pipe Length	Year Constructed
CSX - Waverley St.	36	RCP	3350	1991
Beaver St. - Beaver Dam Brook	36	RCP	1130	1971
Beaver Dam Brook - Arthur St.	42	RCP	3200	1971

This response was provided by Paul Brinkman and Steve Geribo of SEA Consultants, Inc.

**D.T.E. 02-46: ASH 2-2**

Please provide operations and maintenance expense information that Framingham has in its possession which relate to the shared sewer segments whether or not this expense information is specifically responsive to solely the shared sewer segments.

**RESPONSE TO ASH 2-2**

As set forth above, because Framingham assesses operations and maintenance costs to its users on a system-wide basis based on quantity of flow, Framingham has never attempted to segregate data relating to operations and maintenance costs on a "pipe by pipe" basis. Framingham provided information pertaining to Framingham's total budgeted and expended costs pertaining to operation of the sewer system in response to the DTE's Third and Fourth Sets of Information Requests.

This response was provided by Paul Brinkman and Stephen Geribo of SEA Consultants, Inc., and Robert Addelson, Framingham's Chief Financial Officer.

**D.T.E. 02-46: ASH 2-3**

Other than what has been previously outlined in prior discovery responses, why has Framingham stated in response to Ashland Information Request 1-1 that it is improper and inaccurate to calculate operations and maintenance expenses by the shared segments as opposed to by volume?

**RESPONSE TO ASH 2-3**

Please see Stephen Geribo's direct and rebuttal testimony. As outlined therein, operation and maintenance costs should be calculated and allocated on a volume basis for the following reasons:

- a) This is the cost allocation practice utilized by most utility service providers, including the MWRA, municipal water and wastewater providers, electric companies, telecommunications companies, cable television providers, and gas providers. If these providers were to calculate service charges based on the actual facilities used by each customer, their cost accounting systems would become onerous, unfair, and impossible to implement. This method of assessment also would penalize severely those users located a long distance from the source of the service. For example, if Ashland were billed by the MWRA for operation and maintenance charges based on the lengths of the pipes used to convey Ashland's wastewater to the MWRA's Deer Island facility, Ashland consumers would pay

substantially more than consumers located in Winthrop, which is in close proximity to Deer Island.

b) The collection system operates as an integrated unit. Upstream discharges eventually flow through other common facilities on their way to the treatment facility. In most collection systems there is a single facility (i.e. pipe, pump station, treatment facility), which is required to function continuously to convey wastewater to the municipal discharge point. Thus, a problem in one part of the system can have a significant impact on the proper functioning of the entire system.

c) The actual costs of providing operation and maintenance to various segments of any collection system can vary substantially on a year-to-year basis. If Framingham were to assess Ashland only for maintenance performed on particular pipe segments in any one year, Ashland's payments to Framingham would be difficult to predict and would vary substantially from year to year. Ashland's percentage flow, on the other hand, is substantially the same in each year.

d) All inch-mile costs are not the same. The use of pipe inch-mile is not a reliable indicator of the actual wear and tear on a pipe, the costs of operating and maintaining a pipe, or the life cycle of a pipe.

This response was provided by Paul Brinkman and Stephen Geribo  
of SEA Consultants, Inc.

**D.T.E. 02-46: ASH 2-4**

In response to Ashland Information Request 1-7, what map did SEA use to determine the inch-miles of sewer? Was it the MWRA Community Sewerage Map of Framingham? If not, which map was it? Was the Appendix B map referenced by SEA in ASH 1-7 prepared by SEA?

**RESPONSE TO ASH 2-4**

SEA has not completed specific inch-mile calculations for the entire collection system in the Town of Framingham. Small sections of the system have been calculated using existing Town mapping.

The MWRA Community Sewerage Map was not used to determine inch-miles. To our knowledge it does not contain information necessary to complete in-mile calculations. The map is schematic in nature and does not reflect the actual length and diameter of the pipes.

As referenced above any inch-mile calculations were estimated using existing Framingham maps and plan and profile information.

The map shown in Appendix B was prepared by SEA using an electronic version of the MWRA Community Sewerage Map as the base map. As indicated in Framingham's response to ASH 1-7, small changes were made to the schematic map to reflect changes in the Framingham collection system.

This response was provided by Stephen Geribo and Paul  
Brinkman of SEA Consultants, Inc.

**D.T.E. 02-46: ASH 2-5**

Per FRA's response to ASH 1-13, if Ashland and Framingham combined wastewater flows through the siphons and the siphons are removed, how is it that Ashland's sewerage would likely have to be pumped to the MWRA connection but not pumped through Framingham's? What evidence does Framingham have that Ashland's flow would have to be so pumped?

**RESPONSE TO ASH 2-5**

If the siphons located along the "shared segments" were to be removed and replaced with gravity sewer pipes, the invert of the Beaver Dam Interceptor would be lowered by eight feet. The resulting invert elevation is two feet lower than the invert at the start of the FES, which is over 4000 feet away. In order to overcome this loss in elevation, the wastewater hydraulic grade line would require a pump station in order to allow the wastewater to be discharged to the MWRA at the FES.

This response was provided by Paul Brinkman and Stephen Geribo of SEA Consultants, Inc.

**D.T.E. 02-46: ASH 2-6**

Per FRA's response to ASH 1-14, when there is a surcharge and temporary storage is used, how much of the flow in temporary storage is Ashland's and how is Framingham's? What length of pipe is actually used by Ashland? On average, what is the actual occurrence and duration of Ashland's use of these temporary sewers? Would the sewers surcharge whether or not Ashland discharged into the shared sewers?

**RESPONSE TO ASH 2-6**

Framingham does not have information regarding the quantities of flow stored within Framingham's sewer system during any particular overflow situation. As such, Framingham is unable to quantify the percentage share of any such overflow that originated in Ashland.

The list provided in Framingham's response to ASH 1-14 identifies those pipes within the area of the "shared segments" that are required to temporarily store wastewater in the case of surcharges or back-ups. Framingham has not determined the exact length of those pipes impacted by the surcharges at this time. Continuous metering at several locations within the sewer system would be required to accurately determine the frequency of surcharge occurrence. Recently during a four-week period from mid-March to mid-April of 2003, temporary flow meters installed as part of the Town's I/I program indicated that the pipe system was surcharged at least on two occasions.

This response was provided by Stephen Geribo and Paul Brinkman of SEA Consultants, Inc.

**D.T.E. 02-46: ASH 2-7**

Per FRA's response to ASH 1-16, why did Framingham's flow drop from 1996-2002?

**RESPONSE TO ASH 2-7**

Framingham does not know the cause of the reductions in flows from Framingham during the indicated period. It may be as a result of several different factors, including:

- Climate changes resulting in less infiltration and inflow,
- Reductions related to the active infiltration and inflow removal program in Framingham,
- An increase in the accuracy of the MWRA wastewater metering,
- Reductions from customers utilizing low flow fixtures and other water conservation measures,
- Reductions in use related to economic changes,
- And reductions in use from industry and commercial users.

This response was provided by Stephen Geribo and Paul Brinkman of SEA Consultants, Inc.

**D.T.E. 02-46: ASH 2-8**

Per FRA's response to ASH 1-17, by "shared segments" does SEA mean the Farm Pond Interceptor? Did the samples that were taken only include Ashland's flow? When were the samples taken? What were the sulfide levels? Please provide the documentation to support this response. Did the Farm Pond Interceptor replace the pipeline at CSX-Waverly Street as indicated in FRA's response to ASH 1-2?

**RESPONSE TO ASH 2-8**

The referenced samples are those discussed in Framingham's response to DTE F-1-14, and the documents appended thereto. Framingham's records indicate that the Farm Pond Interceptor replaced the CSX-Waverley Street sewer.

This response was provided by Stephen Geribo and Paul Brinkman of SEA Consultants, Inc.

**D.T.E. 02-46: ASH 2-9**

Per FRA's response to ASH 1-24, how does SEA know Ashland's lines remain below the groundwater table after they enter Framingham? Are they perpetually below the groundwater table.

**RESPONSE TO ASH 2-9**

SEA does not know if Ashland's lines remain below the groundwater table at all points after the lines enter Framingham. However, based upon professional judgment and an understanding of the hydrogeology of the area, it appears that at least some portions of the lines are below the groundwater table after the lines enter Framingham.

Further, to the extent the lines are not located beneath impervious surfaces, aboveground precipitation will introduce infiltration into the lines.

This response was provided by Stephen Geribo and Paul Brinkman of SEA Consultants, Inc.

**D.T.E. 02-46: ASH 2-10**

In SEA's Odor and Corrosion Control Study of the Framingham System, how was it determined that "Ashland's discharge to Farm Pond Interceptor contains 80% of the sulfate loading from all Framingham and Ashland discharges combined"? How was the 80% figure derived?

**RESPONSE TO ASH 2-10**

This figure was determined and derived from information presented at MWRA meetings and from the MWRA's FES Odor and Corrosion Study, dated February 2001, completed by Montgomery Watson. Sampling data and tables included in the report estimated the quantities of sulfate in the wastewater discharges of the FES\FERS system.

This response was provided by Stephen Geribo and Paul Brinkman of SEA Consultants, Inc.

**D.T.E. 02-46: ASH 2-11**

In the Odor and Corrosion Control Study of the Framingham System it is stated "the manhole [the main point of connection of Ashland to the Farm Pond Interceptor] shows sever [sic] corrosion and there have been reports of odors in the vicinity." What specifically in the manhole was corroded? Was the case and source of corrosion determined? If yes, what was the basis of the determination? Can Framingham determine the nature and source of the odor? How much did Ashland contribute to the nature and source of this odor? By what measurements?

**RESPONSE TO ASH 2-11**

During initial sewer system research, the major discharge points into the Framingham sewer system were visited by SEA personnel in December of 2000. A manhole located just prior to the connection point to the Farm Pond Interceptor from Ashland exhibited severe corrosion. (This manhole was abandoned by Ashland in 2002.) There was aggregate loss, the manhole cover and frame had severe pitting, and the concrete reinforcement was exposed in places. It was determined that the source of the odor and corrosion was the Ashland discharge, which dropped for approximately three feet through the end of a Parshall flume located ten feet upstream from the manhole. Based upon SEA's professional judgment and experience, this three-foot drop caused sulfide in the Ashland discharge to be stripped and become airborne in the headspace above the sewage. In SEA's opinion, the resulting hydrogen sulfide gas was the source of both the odor and corrosion.

Furthermore, although Framingham has not kept detailed records of odor complaints, personnel at Framingham's Department of Public Works did receive odor complaints from workers at the CSX railway yard in the years leading up to SEA's discovery of this corroded manhole.

Please refer to the Framingham Odor and Corrosion Study for further information.

This response was provided by Paul Brinkman and Stephen Geribo of SEA Consultants, Inc.

**D.T.E. 02-46: ASH 2-12**

How was the "estimated flow" at Sample Location A-7 and H-1 in Odor and Corrosion Control Study determined?

**RESPONSE TO ASH 2-12**

The estimated flows for these two locations were taken from flow information provided by the MWRA. These estimates were only used as the basis for calculating a mass of sulfide in the sewer system at a specific location, and not for the purposes of establishing wastewater cost allocation.

This response was provided by Stephen Geribo and Paul Brinkman of SEA Consultants, Inc.

**D.T.E. 02-46: ASH 2-13**

Per FRA's response to ASH 1-13, Framingham has failed to state which facilities and equipment in its system are "necessary" to convey Ashland's sewerage? Ashland did not ask how Framingham operates its system or how changes would affect the Framingham system. What specific equipment in the Framingham sewerage system are utilized by Ashland?

**RESPONSE TO ASH 2-13**

Framingham objects to Ashland's characterization of its response to ASH 1-13. Subject to and without waiving this objection, Framingham will attempt to elaborate on the comprehensive nature of the Framingham sewer system.

The system was constructed over a period of greater than one hundred years with each addition to the sewer system "building" on the existing system or replacing an existing facility. Originally the system was configured to transport Framingham's wastewater through a sewage pumping station near Arthur Street to a treatment facility located near the Natick Mall and Shoppers World (about 2 miles from the MWRA Arthur Street facility). Later, with the extension of the MDC's sewer to Framingham, Framingham's system was modified to allow the discharge from Framingham to be directed to the FES.

Thus, because Framingham's entire system has been modified over the years in a way best designed to discharge wastewater to the FES, the entire system benefits Ashland, in that Ashland now has a direct and efficient connection to the FES.

This response was provided by Paul Brinkman and Stephen Geribo of SEA Consultants, Inc.

Respectfully submitted,  
THE TOWN OF FRAMINGHAM,  
By its attorneys,

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